#Getting started with Naive Bayes

#Install the package

#install.packages(“e1071”)

#Loading the library

library(e1071)

?naiveBayes #The documentation also contains an example implementation of Titanic dataset

#Next load the Titanic dataset

data("Titanic")

#Save into a data frame and view it

Titanic\_df=as.data.frame(Titanic)

head(Titanic\_df)

#Creating data from table

repeating\_sequence=rep.int(seq\_len(nrow(Titanic\_df)), Titanic\_df$Freq) #This will repeat each combination equal to the frequency of each combination

head(repeating\_sequence)

#Create the dataset by row repetition created

Titanic\_dataset=Titanic\_df[repeating\_sequence,]

head(Titanic\_dataset)

dim(Titanic\_dataset)

dim(Titanic\_df)

dim(Titanic)

#We no longer need the frequency, drop the feature

Titanic\_dataset$Freq=NULL

#Fitting the Naive Bayes model

Naive\_Bayes\_Model=naiveBayes(Survived ~., data=Titanic\_dataset)

#What does the model say? Print the model summary

Naive\_Bayes\_Model

#Prediction on the dataset

NB\_Predictions=predict(Naive\_Bayes\_Model,Titanic\_dataset)

#Confusion matrix to check accuracy

table(NB\_Predictions,Titanic\_dataset$Survived)

#Getting started with Naive Bayes in mlr

#Install the package

install.packages(“mlr”)

install.packages("mlr")

#Loading the library

library(mlr)

head(Titanic\_dataset)

#Create a classification task for learning on Titanic Dataset and specify the target feature

task = makeClassifTask(data = Titanic\_dataset, target = "Survived")

#Initialize the Naive Bayes classifier

selected\_model = makeLearner("classif.naiveBayes")

#Train the model

NB\_mlr = train(selected\_model, task)

#Read the model learned

NB\_mlr$learner.model

#Predict on the dataset without passing the target feature

predictions\_mlr = as.data.frame(predict(NB\_mlr, newdata = Titanic\_dataset[,1:3]))

##Confusion matrix to check accuracy

table(predictions\_mlr[,1],Titanic\_dataset$Survived)